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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/586,174

07/17/2006

Toshihiko Ohashi

MAT-8868US

2827

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7590

09/30/2008

RATNERPRESTIA

P.O. BOX 980

VALLEY FORGE, PA 19482

EXAMINER

OMAR, AHMED H

ART UNIT

PAPER NUMBER

2838

MAIL DATE

DELIVERY MODE

09/30/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/586,174	OHASHI ET AL.	
	Examiner	Art Unit	
	AHMED OMAR	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/17/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The instant application having Application No. 10/586174 filed on 07/17/2006 is presented for examination by the examiner.

Oath/Declaration

2. The applicant's oath/declaration has been reviewed by the examiner and is found to conform to the requirements prescribed in **37 C.F.R. 1.63**.

Priority

As required by **M.P.E.P. 201.14(c)**, acknowledgement is made of applicant's claim for priority based on applications filed on 12/14/2004 (JP 2004-361166).

Drawings

3. The applicant's drawings submitted are acceptable for examination purposes.

Information Disclosure Statement

4. As required by M.P.E.P. 609, the applicant's submissions of the Information Disclosure Statement dated 07/17/2006 is acknowledged by the examiner and the cited references have been considered in the examination of the claims now pending.

Claim Objections

5. Claim 1 is objected to because of the following informalities:

Claim 1 refers states “the determination is forbidden just after start of the start of the charge of the capacitors, and the determination is started at the time when charge voltage V_c of the capacitor unit is at most a predetermined voltage value “ V_d ””. The underlined terms are vague and indefinite. It is unclear to the examiner what time period after the start of the charge is the determination circuit forbidden from starting during, and it is also unclear what voltage range the applicant intends to cover using the phrase "at most". Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made

7. **Claims 1 and 4** are rejected under 35 U.S.C. 103(a) as being obvious over Rokuto (JP 2000-287373) in view of Okamura (US 5,969,505).

As per **claims 1 and 4**, Rokuto discloses a power supply device comprising:

a capacitor unit in which capacitors are interconnected in series or series-parallel

(See Par.1 and Fig.14, disclose a capacitor electricity accumulating device comprising 2 or more capacitors in connected in series);

a charging unit for charging the capacitor unit at a constant current (See Fig.14 and Par.2, disclose a constant current source);

a detecting unit for detecting voltage on a high potential side of each capacitor
(See Par.9 discloses a first and second voltage detection means);

a communication unit for outputting a determining result from the determining unit (See. Par.12, discloses that when a second predetermined voltage is reaches, a signal is outputted by the second detection means to the display means to identify a deteriorated capacitor),

Rokuto discloses a signal is generated by the detecting unit when a second predetermined voltage is reached (See Par. Abstract) detecting unit acts as both detecting and determining unit)

wherein

the determining unit determines the abnormality difference between respective voltages on the high potential side of some adjacent capacitors exceeds upper-limit voltage 'Va', when the difference is lower than lower limit-voltage "Vb", or when a voltage value is negative (See Par.15, discloses a charge circuit opening means when the voltage of the capacitor exceeds a predetermined upper limit, also See Par.29, discloses the voltage detection circuit will open the point of contact "due to detection of abnormality" when the voltage becomes less than lower limit voltage).

The determination is forbidden just after the start of the charge of the capacitors, and the determination is started at the time when charge voltage Vc of the capacitor unit is at most a predetermined voltage value "Vd" (See Par.10, and abstract disclose that the capacitor is charged If the voltage of the capacitor exceeds the rated voltage and it continues for a prescribed time, it is detected by the second voltage detecting circuit , the

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contact of a relay is turned on and an operation indicating lamp is lighted to indicate deterioration in the capacitance of the capacitors to the outside)

But Rakuto does not explicitly disclose a determining unit for determining a calculation unit for determining existence of an abnormality by performing calculation based on the voltage detected by the detecting unit.

Okamura discloses a charging circuit for charging capacitors of a capacitor bank comprising an arithmetic circuit that performs calculations based on the voltage detected by the detecting unit (See Col.3, lines 33-48 and Fig.2, item#11).

All the claimed elements were known in the prior art and one skilled in the art could have combined Rakuto's invention with Okamura's determining unit as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Doing so would allow the user to easily adjust the predetermined values with a simple change in the parameters in the determining unit.

As per **claim 2**, Cancelled.

As per **claim 3**, The power supply device according to claim 1 as discussed above, wherein lower-limit voltage value "Vb" is expressed by $V_b = V_c / (2N)$, where "Vc" is a charge voltage value of the capacitor unit and "N" is series number of the capacitors (See. Par.29 and Fig.5, disclose the lower limit voltage is lower than E_4 ; lower than $V_c / 2N$).

It would have been obvious to one of ordinary skill in the art to set the lower- limit voltage to half the charging voltage per capacitor ($V_c/2N$) since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

8. **Claim 5** is rejected under 35 U.S.C. 103(a) as being obvious over Rokuto (JP 2000-287373) in view of Okamura (US 5,969,505) in further view of Mitani (WO 2005/050811) (US publication# 2006/0038442 is an English equivalent of the PCT publication)

As per **claim 5**, Rokuto in view of Okamura disclose the power supply device as disclosed to claim 1 above but does not disclose the predetermined voltage value "Vd" is expressed by $V_d = V_t \times \{ 1 + (N - 1 - M) \times (1 - \text{dev}) / (1 + \text{dev}) \} \alpha$,

where "Vt" is a withstand voltage value per capacitor cell, "dev" is a capacity variation of the capacitors, "N" is series number of capacitors, "M" is the number of series stages including short-failed capacitors, and " α " is a detection error margin.

But Mitani discloses $V_o = V_1 + (1 - (F_{\text{deg}} + A_{\text{deg}}) / (1 + (F_{\text{deg}} + A_{\text{deg}}))) \times V_1 \times (T - 1)$

Wherein V1 is the withstand voltage value per capacitor cell, Fdeg is the initial dispersion in the capacitor and the aged deterioration is Adeg and T is the number of capacitors connected in series. The use of α as a detection error margin is an obvious design choice to account for equipment measurement tolerances.

It would have been obvious to one of ordinary skill in the art to modify the invention as disclosed by Rokuto in view of Okamura starting the determination at the time when the charge

voltage of the capacitor is at most a predetermined voltage value "Vd", doing so would account for variations and reading errors.

Conclusion

The prior art made of record and not relied upon is cited to establish the level of skill in the applicant's art and those arts considered reasonably pertinent to applicant's disclosure. See **MPEP 707.05(c)**.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED OMAR whose telephone number is (571)270-7165. The examiner can normally be reached on Monday-Thursday 06:30-16:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Akm Ullah can be reached on 571-272-2361. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Supervisory Patent Examiner, Art Unit 2838

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